

SEMI-SOLID MOLDING METHOD

Abstract of the Disclosure

A metal alloy is heated to a molten state, and a grain refiner may be added. The refined molten alloy is poured into a large diameter shot sleeve of a vertical die cast press and on top of a shot piston. The shot sleeve is transferred to an injection station while the molten alloy cools to a semi-solid slurry with approximately fifty percent solids and a globular, generally non-dendritic microstructure. A center portion of the slurry is injected upwardly by the piston through a gate opening into a die cavity while an outer more solid portion of the slurry is entrapped in an annular recess. After the slurry solidifies, the shot piston retracts, and the shot sleeve is transferred to a position where the residual biscuit is removed. A second shot sleeve filled with the molten alloy is transferred to the metal transfer station, and the process is repeated.